

The Effect of the Guided Inquiry Learning Model on Learning Outcomes and Creative Thinking Skills of High School Students

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Abstract

Classroom learning requires the use of effective learning models to support student learning outcomes and creative thinking skills. The Guided Inquiry learning model can be used in class as an alternative learning model. This study aims to examine the effect of the Guided Inquiry model on learning outcomes and creative thinking skills of high school students. The research method used was a Quasi Experimental Design and was designed with a pre-test post-test control group design. Data on learning outcomes were taken using multiple choice of 10 questions and data on creative thinking skills were taken using a description of 5 questions. The research was conducted in class X-7 and X-8 which were selected through cluster random sampling using a lottery technique. The results showed that the learning outcomes and creative thinking skills of the experimental class students were higher than those in the control class. The results of the analysis show that (1) there is a significant effect of the use of the Guided Inquiry learning model on high school student learning outcomes, (2) there is a significant effect of the use of the Guided Inquiry learning model on students' creative thinking skills.

Keywords: Guided Inquiry, Learning Outcomes, Creative Thinking Skills, Geography

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1. Introduction

In the current era of development of science and technology, Indonesia needs Human Resources who can keep up with developments. The human resources needed need to have the ability to think creatively and innovatively. Information and communication technology are used in the form of Mobile Phones, the Internet, Social Media, and others. Science and technology also have an impact on the world of 21st-century education. Teachers and students work together in the learning process to achieve the learning objectives that have been prepared (Hanafy, 2014).

Teachers adjust learning objectives to the curriculum that schools use, and since 2022 the Ministry of Education, Culture, Research, and Technology, has changed the

2013 Curriculum to the Independent Learning Curriculum. According to Hutabarat et al., (2022) stated that the purpose of independent learning is so that teachers, students, and parents can get a pleasant atmosphere. Teachers can use the Merdeka Curriculum as a reference for innovating material in learning. Teachers need innovative learning models to achieve learning objectives. Innovative learning models play a role in improving the quality of teaching and learning activities (Octavia, 2020).

Teachers in conducting learning in high school still experience problems in learning aids or media. This problem has an impact on the low creative thinking skills of students. The low level of creative thinking of students in high school is caused by the lack of teacher creativity in choosing and using varied learning models (Ulandari et al., 2019). Teachers need to choose the right learning model to achieve learning objectives. Teachers who use innovative learning models are expected to overcome the problems faced by students during the learning process. Students can be directed to think creatively in solving problems and understanding the material. The ability to think creatively will affect students' understanding of facing problems in the learning process on learning outcomes (Cintia et al., 2018).

21st-century learning can be developed with various learning models and strategies based on activities that match the character of competencies and learning materials (Fitrah et al., 2022). Students are directed to search and find new things related to learning materials with teacher guidance. Students not only hear the teacher's explanation verbally, but students can find the essence of the learning material themselves. Efforts to improve student creativity and student learning outcomes in the classroom are by applying a guided inquiry learning model. According to Lestari (2019), the guided inquiry model provides opportunities for students to work on formulating problems, analyzing results, and drawing conclusions independently. Teachers can use the guided inquiry learning model to direct students to develop work steps in solving problems that have been given by the teacher.

The guided inquiry learning model is a learning model that emphasizes discovery. Students are guided by teachers to find answers to problems that have been given (Supiyati et al., 2019). The advantage of this learning model is that it can foster students' scientific attitude and free thinking by exploring in solving a problem. The guided inquiry model is more in guiding through questions given by the teacher to students in between learning so that students are easier to draw or draw conclusions (Lovisia, 2018). In addition, this model has the advantage of directing students to solve the problems they face through experiments and discoveries that lead students to find their own concepts. The teacher acts as a facilitator and ensures that all students are directly involved in learning, both in asking questions, seeking information, and conducting investigations. Based on this, the implementation of the guided inquiry model is expected to improve students' ability to think creatively and their learning outcomes and can be used as a reference for teachers in schools in geography learning.

Previous research, namely from Purwanto et al., (2020) showed that the guided inquiry model with TAQ-based LKS was able to affect students' critical thinking skills. Then research from Ambarwati (2021) shows an increase in learning outcomes in mining goods distribution material through guided inquiry learning methods shown by an increase in the number of students reaching KKM. In addition, research from Yeftha et al., (2020), the guided inquiry model has a positive influence on student learning outcomes in the geography subjects of X-glass hydrosphere material, where 68% of students have reached the minimum completeness criteria (KKM). Researchers in this

study used independent variables of guided inquiry learning models. While the dependent variables are learning outcomes and creative thinking skills in students.

Previous research, namely from Purwanto et al., (2020) showed that the guided inquiry guided inquiry learning model is a learning model that requires teachers to provide instructions in the form of broad guidance to students, providing instructions given to students in the form of questions that can direct students in finding actions used to solve a problem (Widyawati et al., 2019). The syntax of the guided inquiry learning model according to (Mukmainah et al., 2020) is to present questions or problems, make hypotheses, design experiments, conduct experiments to obtain information, collect data and analyze data, and make conclusions.

Learning outcomes are usually in the form of grades given by teachers to students to measure their learning (Nuridayati, 2022). Assessment of learning outcomes concerns cognitive, affective, and psychomotor aspects. Creative thinking is the skill of creating renewal or developing something that exists into renewal (Maryanto & Siswanto (2021). Students are said to be able to think creatively if they master the indicators that have been determined. According to Wanelly & Fauzan (2020), there are several indicators of creative thinking, including namely: (1) fluency, for example, the ability to generate ideas, answers, and solutions to problems; (2) flexibility, for example, the ability to produce varied ideas; (3) originality, for example, to develop an idea or product.

This study aims to examine the influence of the Guided Inquiry learning model on the learning outcomes and creative thinking skills of high school students, the topic of discussion of geosphere phenomena in the anthroposphere of class X even semester. Based on the description above, researchers are interested in conducting research entitled "The Effect of Guided Inquiry Learning Model on Learning Outcomes and Creative Thinking Skills of High School Students".

2. Method

The type of research used in this study is Quasi-Experimental Design. This type of Quasi-experimental research aims to investigate the influence on the cause of an event. The research design used was a pre-test post-test control group design. This study included two randomly selected groups, after determining the experimental class and control class, then gave special treatment to the experimental class using the Guided Inquiry learning model while the control class was not given special treatment.

The research was conducted in grade X of SMAN 5 Jember for the 2022/2023 school year. Class X was chosen because of the suitability of the research material. The samples in this study were selected into 2 groups, namely the control class group and the experimental class group which amounted to 1 each. Before sampling, researchers conducted a homogeneity test by looking at the results of daily repeat values on the previous material which was then processed using the SPSS 23 application, later if the sample results proved homogeneous, then the sample was determined using the cluster random sampling method. The cluster random sampling method is a regional sampling technique used to determine samples based on class. To determine the experimental class and the control class using the lottery technique.

The data collection technique uses a test consisting of pretest and posttest in the form of multiple-choice questions (10 questions) and descriptions (5 questions) on geosphere phenomenon material in the anthroposphere of class X even semester. Pretest is used to determine students' abilities before learning takes place. While Posttest is used to determine students' abilities after the implementation of learning. Pretest and Posttest

are used as reference materials to determine the improvement of student learning outcomes and creative thinking skills. Data collection techniques are also carried out through interviews with class X Geography subject teachers and documentation. The first data analysis technique used is the normality test which is used to see whether the data in a study is well distributed and normal. Second, test homogeneity to find out whether some population variants are the same or not. Third, the N-Gain test to determine the difference in improvement experienced by the control class and the experimental class. Finally, the T-Test to see the effect of the learning model, with statistical tests, if the significant value > 0.05 then H_0 is accepted and H_a is rejected, but if the significant value ≤ 0.05 then H_a is accepted and H_0 is rejected.

3. Result and Discussion

The first stage is to conduct a homogeneity test to find out whether several population variants are the same or not. The homogeneity test results of 8 populations in this study were homogeneously distributed data, with a significant value of 0.669. The determination of the control class and experimental class was carried out by lottery technique, the results of the draw showed that class X-7 as the experimental class and class X-8 as the control class.

Table 1. Homogeneity Test Results

Test of Homogeneity of Variances			
PAS Geography Results			
Levene Statistic	df1	df2	Sig.
.704	7	267	.669

Source: Data Processing Results, 2023

The subjects of this study were 34 students of grade X-7 and class X-8 of 33 students. The guided inquiry learning model is used in class X-7 as an experimental class. Class X-8 as a control class uses conventional learning methods.

A. The Effect of the Guided Inquiry Learning Model on Student Learning Outcomes

The learning outcomes of students in this study used geosphere phenomenon material in the anthroposphere in class X. The research data was carried out in two ways, namely by pretest and posttest. Pretest is done before learning starts while posttest is done after learning is carried out. The research was conducted in an experimental class and a control class in the form of multiple choice of 10 questions.

Table 2. Average Pretest Scores of Student Learning Outcomes

Descriptive Analysis					
	N	Minimum	Maximum	Mean	Std. Deviation
Experiment	34	10	60	33.53	16.676
Control	33	30	90	55.45	16.973
Valid N (listwise)	33				

Source: Data Processing Results, 2023

Table 3. Average Posttest Scores of Student Learning Outcomes

Descriptive Analysis					
	N	Minimum	Maximum	Mean	Std. Deviation
Experiment	34	40	100	71.18	17.014

Control	33	40	90	61.52	15.025
Valid N (listwise)	33				

Source: Data Processing Results, 2023

Analysis of posttest data results of experimental class and control class learning outcomes can be seen in Figure 1. The figure shows the percentage of posttest geography learning outcomes which are divided into C2 (understanding), C3 (applying), and C4 (analyzing). In the picture, you can see the graph in the experimental class is higher than the control class.

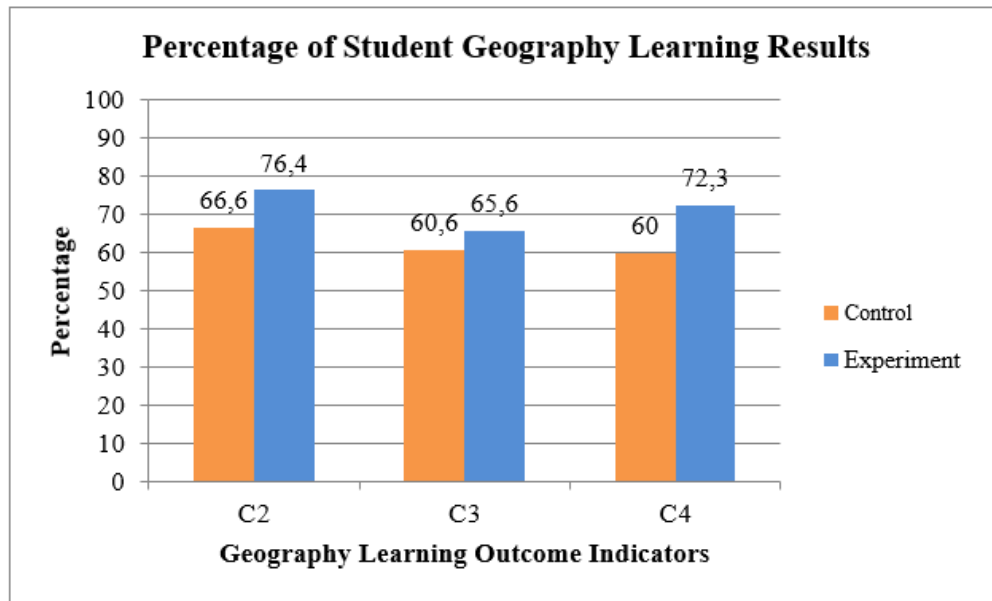


Figure 1. Graph of Average Value Calculation of Learning Outcomes of Experimental Class and Control Class

Figure 1 shows the percentage of learning outcomes of the experimental class higher than the control class. The acquisition of data on the values of the control class and experimental class will then be tested for normality. Test normality to find out if the data is normally distributed or not. The following are the results of the pretest and posttest normality test of the learning outcomes of experimental and control class students.

Table 4. Pretest Normality Test Results Student Learning Outcomes

		Normality Test Pretest					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Class	Statistic	Df	Sig.	Statistic	Df	Sig.
Pretest Results	Experiment	.144	34	.070	.916	34	.013
	Control	.122	33	.200*	.944	33	.088

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: Data Processing Results, 2023

Based on Table 4. Normality test results were obtained from the experimental class 0.070 and the control class 0.200. Both groups of data had significance values > 0.05. This shows that the data on the pretest results of student learning outcomes in the experimental class and control class are normally distributed.

Table 5. Posttest Normality Test Results Student Learning Outcomes

		Normality Test Post Test					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Class	Statistic	Df	Sig.	Statistic	Df	Sig.
<i>Posttest Results</i>	Experiment	.145	34	.067	.947	34	.097
	Control	.146	33	.071	.928	33	.032

Source: Data Processing Results, 2023

Based on Table 5. Normality test results were obtained from the experimental class 0.067 and the control class 0.071. Both groups of data had significance values > 0.05. This shows that the posttest result data of student learning outcomes in both experimental and control classes is normal. Furthermore, an N-Gain test was carried out to determine whether or not there was an increase in the experimental class and the control class on student learning outcomes. Here are the results of the N-Gain Test of the control class and the experimental class.

Table 6. N-Gain Test Results of Control Class Student Learning Outcomes

N-Gain Test Control					
	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	33	-2.00	.71	.0201	.53387
NGain_Persen	33	-200.00	71.43	2.0130	53.38672
Valid N (listwise)	33				

Source: Data Processing Results, 2023

Table 7. N-Gain Test Results Learning Outcomes of Experimental Class Students

N-Gain Test Experimental					
	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	34	-.25	1.00	.5399	.30856
NGain_Persen	34	-25.00	100.00	53.9916	30.85606
Valid N (listwise)	34				

Source: Data Processing Results, 2023

Control class N-Gain test results in Table 6. indicate that the N-gain value in the control class is 0.02 or 2% in the low category. While in the experimental class shown in Table 7. is included in the medium category with an N-gain value of 0.53 or 53.9%. So it can be concluded that there are differences in student learning outcomes between the control class and the experimental class. The experimental class experienced moderate improvement after receiving treatment. Furthermore, the independent sample t-test of geography learning results can be seen in the following table.

Table 8. Student Learning Outcomes T-test Results

Independent Samples Test								
Levene's Test for Equality of Variances				t-test for Equality of Means				
F	Sig.	t	Df	Sig. (2-	Mean Difference	Std. Error	95% Confidence Interval of the Difference	

						tailed)		Diffe rence	Lower	Upper
Lear ning Outc omes	Equal variances assumed	3.113	.08 2	4.8 97	65	.000	.51979	.1061 4	.30781	.73176
	Equal variances not assumed			4.8 60	50.9 23	.000	.51979	.1069 4	.30508	.73449

Source: Data Processing Results, 2023

The Guided Inquiry learning model affects the geography learning outcomes of high school students. This can be seen by the calculation of the independent sample t-test in Table 8. Based on Table 8. The value of Sig. (2 tailed) in geography learning outcomes is 0.000, indicating that the value of Sig. (2 tailed) < 0.05, so it can be concluded that there is an influence of the Guided Inquiry model on student geography learning outcomes.

The application of the Guided Inquiry learning model has a good impact on improving student learning outcomes. As research by Muliani & and Wibawa (2019) states there is a significant increase in science learning outcomes using the Guided Inquiry learning model with the help of videos. Research by Nurmayani, et al., (2018) shows that the Guided Inquiry learning model has a significant influence on student learning outcomes compared to conventional learning. This is because by using the Guided Inquiry learning model, students are actively involved in learning. Active involvement of students in learning makes students not only memorize but build and understand learning concepts. According to research by Amijaya, et al., (2018) students' physical and mental activity in guided inquiry learning activities can improve students' cognitive learning outcomes. The application of the Guided Inquiry learning model to experimental classes provides significant changes, namely, students are more active in expressing solutions to the problems given and improving learning outcomes to the maximum. The Guided Inquiry learning model makes the learning atmosphere more active which is characterized by students who are more active in asking questions that motivate themselves to seek answers. Students no longer make the teacher the only source of information.

B. The Effect of the Guided Inquiry Learning Model on Students' Creative Thinking Skills

Analysis of creative thinking skills is applied to the control class and the experimental class. The material used is geosphere phenomena in the anthroposphere. The form of data used is the pretest and posttest results. The results of the pretest and posttest creative thinking skills are outlined in the following table.

Table 9. Average Pretest Score of Students Creative Thinking Skills

Descriptive Analysis					
	N	Minimum	Maximum	Mean	Std. Deviation
Control Class	33	10	90	45.15	20.672
Experimental Class	34	30	90	56.91	17.582
Valid N (listwise)	33				

Source: Data Processing Results, 2023

Based on Table 9. It showed that students in the control class using conventional learning models got an average score of 45.15. Then students in the experimental class

before the application of the Guided Inquiry learning model got a mean or average score of 56.91. Pretest scores are used to determine students' creative thinking skills before learning.

Table 10. Average Posttest Scores of Students Creative Thinking Skills

Descriptive Analysis					
	N	Minimum	Maximum	Mean	Std. Deviation
Control Class	33	20	85	54.24	16.730
Experiment Class	34	55	90	74.71	12.729
Valid N (listwise)	33				

Source: Data Processing Results, 2023

Through Table 10. It shows that students from the control class get the lowest score of 20 and the highest score of 85 with an average grade point of 54.24. In the experimental class, the lowest score was 55 and the highest score was 90. The average score in the experimental class was 74.71. The results of the posttest average scores of creative thinking skills of the experimental class and control class are presented in Figure 2. The picture shows the percentage of posttest students' creative thinking skills which are divided into 4 indicators, namely flexibility, fluency, elaboration, and originality. In the picture, you can see the graph in the experimental class is higher than the control class. The acquisition of data on the values of the control class and experimental class will then be tested for normality to find out whether the data is normally distributed or not.

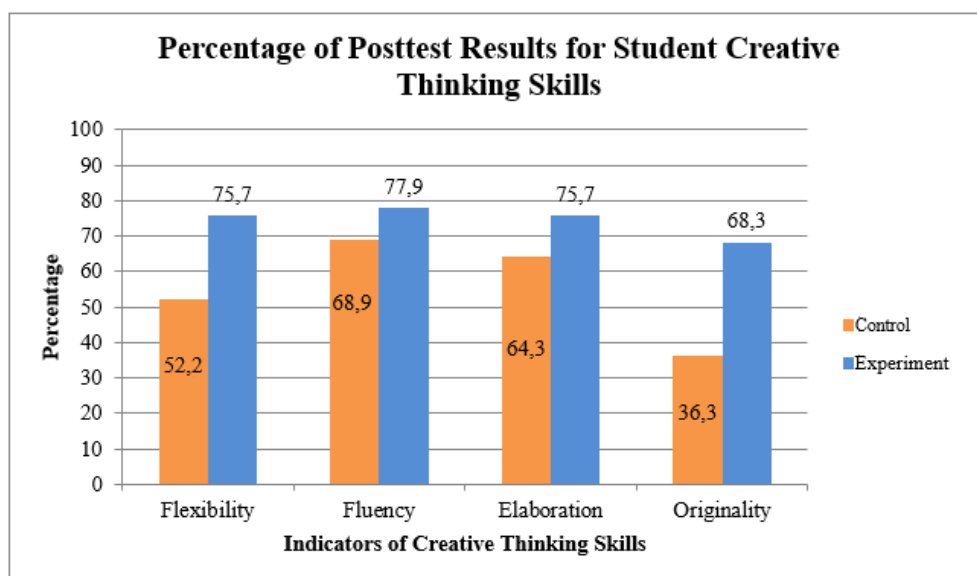


Figure 2. Calculation Graph of the Average Value of Creative Thinking Skills of the Experimental Class and Control Class

The acquisition of data on the values of the control class and experimental class will then be tested for normality to find out whether the data is normally distributed or not. Data can be said to be normal if the significant value is greater than 0.05. Conversely, if the significant value is smaller than 0.05 then the data is said to be abnormal. The following are the results of the pretest and posttest normality test of the learning outcomes of experimental and control class students.

Table 11. Normality Test Results Pretest of Students Creative Thinking Skills

Normality Test Results Pretest Creative Thinking Skills						
Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Result Experiment Class	.126	34	.188	.952	34	.144
Control Class	.138	33	.112	.954	33	.177

Source: Data Processing Results, 2023

The results of the pretest normality test of creative thinking skills in the experimental class showed a significance value of 0.188, and in the control class of 0.112. Both groups of data had significance values > 0.05 . This shows that the data from the pretest results of creative thinking skills in both experimental and control classes are normal.

Table 12. Posttest Normality Test Results of Students' Creative Thinking Skills

Creative Thinking Posttest Normality Test Results						
Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Results Experiment Class	.150	34	.051	.887	34	.002
Control Class	.127	33	.192	.961	33	.278

Source: Data Processing Results, 2023

In Table 12. Showing the posttest normality test of creative thinking skills in the experimental class obtained a significance value of 0.051. The significance values of $0.051 > 0.05$ can then be concluded that the experimental class data are normally distributed. While in the control class, a significance value of 0.192 was obtained, which means that the control class data is also normally distributed. After conducting a normality test and obtaining normal distributed data results, the next step is the N-gain test. Here are the results of N-Gain creative thinking skills in the control class and experimental class.

Table 13. N-Gain Test Results of Creative Thinking of Control Class Students

N-Gain Test Creative Thinking Control Class					
	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	33	-.50	.50	.1329	.19940
NGain_Persen	33	-50.00	50.00	13.2876	19.94016
Valid N (listwise)	33				

Source: Data Processing Results, 2023

Table 14. N-Gain Test Results of Creative Thinking of Experimental Class Students

N-Gain Test Creative Thinking Experimental Class					
	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	34	0.00	.86	.4116	.15248
NGain_Persen	34	0.00	85.71	41.1600	15.24813
Valid N (listwise)	34				

Source: Data Processing Results, 2023

Control class N-Gain test results in Table 13. indicates that the N-gain value in the control class is 0.13 or 13% in the low category. While in the experimental class shown

in Table 14. included in the medium category with an N-gain value of 0.41 or 41%. So it can be concluded that there are differences in creative thinking results between the control class and the experimental class. The next step is the T-test on students' creative thinking skills. The T-test aims to determine the influence of the Guided Inquiry learning model on students' creative thinking skills. Here are the T-test results of students' creative thinking skills.

Table 15. Students Creative Thinking Skills T-test Results

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Creative Thinking	Equal variances assumed	.728	.397	6.439	65	.000	.27872	.04329	.19227	.36517
	Equal variances not assumed			6.413	59.916	.000	.27872	.04346	.19179	.36566

Source: Data Processing Results, 2023

The Guided Inquiry learning model affects the creative thinking skills of geography of high school students. This can be seen by the calculation of the independent sample t-test in Table 15. Based on Table 15. The value of Sig. (2 tailed) in the learning outcomes of geography is 0.000, indicating that the value of Sig. (2 tailed) < 0.05 , so it can be concluded that there is an influence of the Guided Inquiry model on students' creative thinking skills.

It can be concluded that the results of students' creative thinking skills in the experimental class using the Guided Inquiry learning model are higher than the control class using conventional learning models. This is the same as the learning outcomes of students in experimental classes using the Guided Inquiry model are higher than control classes using conventional learning models. This is in line with research from Putri et al., (2018) which explains that the Guided Inquiry learning model, students can improve creative thinking by exploring their own knowledge through experiments to get results from problem solving. The problem-solving process carried out by students differs from one student to another, because in solving problems students have differences in creative thinking. So, with experiments can improve students' creative thinking skills.

4. Conclusion

Based on the results of the data analysis conducted, it can be concluded that there is an influence of the guided inquiry learning model on student learning outcomes. This is based on the results of the T-test showing Sig. (2 tailed) < 0.05 , which is 0.00, which means there is a significant influence on the experimental class. In addition, the guided

inquiry learning model also has a significant effect on students' creative thinking skills as evidenced by the acquisition of T-test results that show Sig. (2 tailed) < 0.05, which is $0.00 < 0.05$.

5. Reference

- Ambarwati, D. (2021). Penerapan Model Pembelajaran Inkuiri Terbimbing Terhadap Materi Sebaran Barang Tambang Di Indonesia Berdasarkan Nilai Strategisnya. *Jurnal Ilmiah Pro Guru*, 3(1), 65-70
- Amijaya, L. S., Ramdani, A., & Merta, I. W. (2018). Pengaruh model pembelajaran inkuiri terbimbing terhadap hasil belajar dan kemampuan berpikir kritis peserta didik. *Jurnal Pijar Mipa*, 13(2), 94-99.
- Cintia, N. I., Kristin, F., & Anugraheni, I. (2018). Penerapan model pembelajaran discovery learning untuk meningkatkan kemampuan berpikir kreatif dan hasil belajar siswa. *Perspektif ilmu pendidikan*, 32(1), 67-75.
- Fitrah, A., Yantoro, Y., & Hayati, S. (2022). Strategi Guru dalam Pembelajaran Aktif Melalui Pendekatan Saintifik dalam Mewujudkan Pembelajaran Abad 21. *Jurnal Basicedu*, 6(2), 2943-2952.
- Hanafy, M. S. (2014). Konsep belajar dan pembelajaran. *Lentera Pendidikan: Jurnal Ilmu Tarbiyah dan Keguruan*, 17(1), 66-79.
- Hutabarat, H., Harahap, M. S., & Elindra, R. (2022). Analisis Penerapan Kurikulum Merdeka Belajar di SMA Negeri Sekota Padangsidimpuan. *JURNAL Math Edu (Mathematic Education Journal)*, 5(3), 58-69.
- Lestari, I. D. (2019). *Pengaruh model pembelajaran inkuiri terbimbing dikombinasikan dengan respon paper terhadap hasil belajar kognitif peserta didik kelas X SMAN 1 Palas Lampung Selatan* (Doctoral dissertation, UIN Raden Intan Lampung).
- Lovisia, E. (2018). Pengaruh model pembelajaran inkuiri terbimbing terhadap hasil belajar. *SPEJ (Science and Physic Education Journal)*, 2(1), 1-10.
- Maryanto, N. R., & Siswanto, R. D. (2021). Analisis kemampuan berpikir kreatif matematis ditinjau dari gaya kognitif dan gender. *ANARGYA: Jurnal Ilmiah Pendidikan Matematika*, 4(1), 109-118.
- Mukmainah, S. A., & Yonata, B. (2020). Penerapan Model Pembelajaran Inkuiri Terbimbing untuk Meningkatkan Keterampilan Berpikir Kritis Peserta Didik pada Materi Laju Reaksi di SMAN 1 Rengel. *UNESA Journal of Chemical Education*, 9(1), 133-139.
- Muliani, N. K. D., & Wibawa, I. M. C. (2019). Pengaruh model pembelajaran inkuiri terbimbing berbantuan video terhadap hasil belajar IPA. *Jurnal Ilmiah Sekolah Dasar*, 3(1), 107-114.
- Nuridayanti. (2022). *Mengembangkan Motivasi dan Hasil Belajar dengan Pendekatan Problem Posing*. Pekalongan: PT Nasya Expanding Management.
- Nurmayani, L., & Nurmayani, L. (2018). *Pengaruh model pembelajaran inkuiri terbimbing terhadap kemampuan berpikir kritis peserta didik* (Doctoral dissertation, Universitas Mataram).
- Octavia, S. A. (2020). *Model-Model Pembelajaran*. Yogyakarta: Deepublish.
- Purwanto, Y. A., Sulur, S., & Suwasono, P. (2020). Pengaruh Guided Inquiry Learning dengan LKS Berbasis TEQ Terhadap Keterampilan Berpikir Kritis Siswa SMA. *Jurnal Riset Pendidikan Fisika*, 4(1), 18-25.

- Putri, N. P. L. K., Kusmariyatni, N., & Murda, I. N. (2018). Pengaruh Model Pembelajaran Inkuiri Terbimbing Berbantuan Media Audio-Visual Terhadap Hasil Belajar IPA. *Mimbar PGSD Undiksha*, 6(3), 153-160.
- Supiyati, H., Hidayati, Y., Rosidi, I., & Wulandari, A. Y. R. (2019). Analisis kemampuan pemecahan masalah siswa menggunakan model guided inquiry dengan pendekatan keterampilan proses sains pada materi pencemaran lingkungan. *Natural Science Education Research*, 2(1), 59-67.
- Ulandari, N., Putri, R., Ningsih, F., & Putra, A. (2019). Efektivitas model pembelajaran inquiry terhadap kemampuan berpikir kreatif siswa pada materi teorema pythagoras. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 3(2), 227-237.
- Wanelly, W., & Fauzan, A. (2020). Pengaruh Pendekatan Open Ended dan Gaya Belajar Siswa terhadap Kemampuan Berpikir Kreatif Matematis. *Jurnal Basicedu*, 4(3), 523-533.
- Widyawati, T., Adnyana, P. B., & Warpala, I. S. (2019). Efektivitas Penerapan Model Pembelajaran Inkuiri Terbimbing Berbasis Pertanyaan terhadap Pemahaman Konsep IPA dan Keterampilan Proses Sains dalam Materi Interaksi Makhluks Hidup dengan Lingkungannya Di Kelas VII Di SMP Negeri 3 Banjar. *Jurnal Pendidikan Biologi Undiksha*, 6(2), 62-71.
- Yeftha, Y., Haryanto, Z., & Saputra, Y. W. (2020). Pengaruh Minat Terhadap Hasil Belajar Geografi Dengan Model Inkuiri Terbimbing di SMAN 3 Samarinda. *Geoedusains: Jurnal Pendidikan Geografi*, 1(1), 15-26.